

CLAIMS

I claim:

- 5 1. A method of making a memory card card, comprising the steps of:
 adding circuit elements to a circuit board, said circuit board includes a set of test
 terminals;
 testing one or more of said circuit elements using said test terminals; and
 covering said test terminals with a conformal contact coating in order to prevent
10 access to said test terminals.
2. A method according to claim 1, wherein:
 said step of covering includes applying a liquid directly to a first surface of said
 circuit board.
- 15 3. A method according to claim 2, wherein:
 said liquid includes a solder mask.
4. A method according to claim 2, wherein:
20 said liquid includes a photoresist.
5. A method according to claim 2, wherein:
 said liquid includes a thermoplastic.
- 25 6. A method according to claim 2, wherein:
 said liquid includes an epoxy.

7. A method according to claim 2, wherein:
said liquid includes polyimide.

5 8. A method according to claim 2, wherein:
said liquid is applied using a screen printing process.

9. A method according to claim 1, wherein:
said step of covering includes applying a film directly to a first surface of said
circuit board.

10 10. A method according to claim 9, wherein:
said film includes an adhesive on one surface.

15 11. A method according to claim 9, wherein:
said film includes mylar.

12. A method according to claim 9, wherein:
said film includes polyimide.

20 13. A method according to claim 1, wherein:
said step of adding circuit elements includes adding a flash memory array to said
circuit board.

25 14. A method according to claim 1, wherein:
said step of adding circuit elements includes mounting a first die on said circuit
board and mounting a second die on said first die.

15. A method according to claim 14, wherein:
said first die includes a flash memory array and said second die includes a
controller.

5 16. A method according to claim 14, wherein:
said first die is wire bonded to said circuit board; and
said second die is wire bonded to said circuit board.

10 17. A method according to claim 1, wherein:
said circuit board includes a conductive layer and a first portion of said
conductive layer forms said test terminals.

15 18. A method according to claim 17, wherein:
a second portion of said conductive layer forms user terminals;
said user terminals are positioned on an outside surface of said memory card; and
said user terminals are in communication with at least a subset of said circuit
elements.

20 19. A method according to claim 1, wherein:
said step of adding circuit elements includes performing a transfer mold process
to encapsulate said circuit elements without covering said test terminals.

25 20. A method according to claim 1, wherein:
said step of covering is performed after said circuit board is removed from a strip
of circuit boards.

21. A method according to claim 1, wherein:

said step of covering is performed before said circuit board is removed from a strip of circuit boards.

5 22. A method according to claim 1, wherein:
said memory card is a flash memory card.

 23. A method according to claim 22, wherein:
said step of covering includes applying a liquid directly to a first surface of said circuit board.

10 24. A method according to claim 22, wherein:
said step of covering includes applying a film directly to a first surface of said circuit board.

15 25. A method of making a peripheral card, comprising the steps of:
adding circuit elements to a plurality of circuit boards of a strip of circuit boards,
each of said plurality of circuit boards includes a set of test terminals;
separating said connected circuit boards;
testing said circuit elements of said circuit boards using said test terminals; and
20 applying a conformal contact coating on a first surface of each of said circuit boards to cover said test terminals and prevent access to said test terminals such that a particular circuit board has its test terminals covered after said particular circuit board has been tested.

25 26. A method according to claim 25, wherein:
said step of separating is performed after said step of applying.

27. A method according to claim 25, wherein:
said step of separating is performed prior to said step of applying.

28. A method according to claim 25, wherein:
5 said step of applying includes applying a liquid directly to a first surface of said circuit boards.

29. A method according to claim 25, wherein:
said step of applying includes applying a film directly to a first surface of said
10 circuit boards.

30. A method according to claim 25, wherein:
said step of adding circuit elements includes mounting a first die on a first circuit
board and mounting a second die on said first die;
15 said first die includes a flash memory array and said second die includes a controller;
said first die is wire bonded to said first circuit board; and
said second die is wire bonded to said first circuit board.

20 31. A method according to claim 25, wherein:
said peripheral card is a memory card.

32. A peripheral card manufactured according to a process comprising the
steps of:
25 adding circuit elements to a circuit board, said circuit board includes a set of test terminals;
testing one or more of said circuit elements using said test terminals; and

applying a conformal contact coating on a first surface of said circuit board to cover said test terminals and prevent access to said test terminals.

33. A peripheral card according to claim 32, wherein:
5 said step of applying includes applying a liquid directly to a first surface of said circuit board.

34. A peripheral card according to claim 32, wherein:
said step of applying includes applying a film directly to a first surface of said
10 circuit board.

35. A peripheral card according to claim 32, wherein:
said circuit board includes a first die mounted on said circuit board and a second
die mounted on said first die;
15 said first die includes a flash memory array and said second die includes a controller;
said first die is wire bonded to said circuit board; and
said second die is wire bonded to said circuit board.

20 36. A peripheral card according to claim 32, wherein:
said circuit board includes a conductive layer;
a first portion of said conductive layer forms said test terminals;
a second portion of said conductive layer forms user terminals;
said user terminals are positioned on an outside surface of said peripheral card;
25 and

said circuit elements are encapsulated by a transfer mold process without covering

said test terminals.

37. A peripheral card according to claim 32, wherein:
said peripheral card is a memory card.

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38. A peripheral card, comprising:
a circuit board;
circuit elements on said circuit board;
a set of user terminals on said circuit board, said user terminals are in
10 communication with at least a subset of said circuit elements;
a set of test terminals on said circuit board, said test terminals are in
communication with one or more of said circuit elements;
an enclosure that covers a portion of said circuit board and said circuit elements
without covering said set of user terminals and said set of test terminals; and
15 a conformal contact coating on a first surface of said circuit board covering said
test terminals and preventing access to said test terminals.

39. A peripheral card according to claim 38, wherein:
said conformal contact coating is applied as a liquid directly to said first surface
20 of said circuit board.

40. A peripheral card according to claim 38, wherein:
said conformal contact coating includes a film that is applied directly to said first
surface of said circuit board.

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41. A peripheral card according to claim 38, wherein:
said circuit elements board include a first die mounted on said circuit board and a

second die mounted on said first die.

5 42. A peripheral card according to claim 41, wherein:
 said first die is wire bonded to said circuit board; and
 said second die is wire bonded to said circuit board.

 43. A peripheral card according to claim 42, wherein:
 said first die includes a flash memory array and said second die includes a
10 controller.

 44. A peripheral card according to claim 41, wherein:
 said first die includes a flash memory array and said second die includes a
15 controller.

 45. A peripheral card according to claim 38, wherein:
 said circuit board includes a conductive layer;
 a first portion of said conductive layer forms said test terminals;
 a second portion of said conductive layer forms said user terminals; and
 said user terminals are positioned on an outside surface of said peripheral card.
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 46. A peripheral card according to claim 38, wherein:
 said peripheral card is a memory card.

 47. A method performed for a peripheral card, comprising the steps of:
25 testing one or more circuit elements of a first peripheral card using one or more
 test terminals of said first peripheral card; and
 covering said test terminals with a conformal contact coating in order to prevent

access to said test terminals.

48. A method according to claim 47, wherein:
said step of covering includes applying a liquid directly to said first peripheral
5 card.

49. A method according to claim 47, wherein:
said step of covering includes applying a film directly to said first peripheral card.

10 50. A method according to claim 47, wherein:
said circuit elements include a flash memory array.

51. A method according to claim 47, wherein:
said first peripheral card is a memory card.

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